

Teacher's Guide

November

Earthquakes



Drop, Cover, and Hold On!

Although earthquakes are uncommon in New York City, tremors occasionally occur. It's important to know what to do if an earthquake or a tremor occurs at school or at home. In August 2011, tremors were felt in New York City from an earthquake that originated in Virginia.

During an earthquake:

- Drop to the floor.
- Take cover under a solid piece of furniture or next to an interior wall.
- Cover your head and neck with your arms.
- Hold on to a sturdy piece of furniture. Stay where you are until the shaking stops.



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After an earthquake:

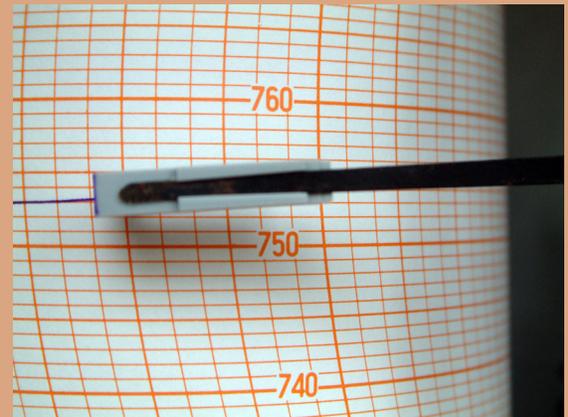
- Check the people around you for injuries. Do not move seriously injured people.
- If you have a fire extinguisher and have been trained to use it, put out any small fires that occurred.
- Be prepared for aftershocks or subsequent tremors.

Let's get ready and stay safe if a tremor or an earthquake strikes!

Did you know? New York State's largest earthquake hit on September 5, 1944, measuring a 5.8 on the Richter scale.

Plan ahead

- Identify safe places in your classroom, such as under desks or solid tables and away from windows, hanging objects, or tall furniture that could fall.
- Examine your room for unstable items that could fall on someone during a tremor. For example, anchor bookcases to the wall and store large, heavy, or breakable objects on low shelves.
- Make sure students know that during a tremor it's best to stay where you are instead of trying to evacuate.
- If you are outdoors, move to a clear area and avoid power lines, buildings, and trees.



Fun fact

There are over 900,000 earthquakes around the world each year. Most can't be felt, but they can be recorded by a seismograph.



Department of Education
Office of Emergency Management

Reinforce the earthquake–safety message and build skills across the curriculum with these simple activities:



Language Arts

Allow time for students to research what causes earthquakes to occur and what is being done to detect earthquakes before they strike. Then, have them write a one-page informative paper or news story sharing what they learned.



Math

Often very large numbers are written in exponential form—including the Richter scale, which is used to measure the strength of earthquakes. A magnitude 1 earthquake is 1×10^1 , a magnitude 2 earthquake is ten times stronger or 1×10^2 , etc. The intensity of an earthquake can range from 1 to 10,000,000.

An earthquake measuring 2 on the Richter scale can barely be felt, but one measuring 7 can cause serious damage. See if your students can use exponential form to answer the following questions. Then ask them to come up with their own questions:

1. How much more intense is an earthquake with magnitude 6 than one with magnitude 3?
2. How much more intense is an earthquake with magnitude 6 than one with magnitude 5?



Social Studies

The largest earthquake in New York City history occurred in 1944. It was felt from Canada to Maryland and from Maine to Indiana and caused about \$2 million in property damage. To research this earthquake and others in our area, check out the U.S. Geological Survey website at www.usgs.gov to view a real-time earthquake-monitoring system.



Science

What is an aftershock? What is a tsunami? Have students research these natural events and then prepare a presentation to explain the cause-effect relationship between an earthquake and a tsunami.

To Learn More:

Office of Emergency Management earthquake information page,
<http://www.nyc.gov/html/oem/html/hazards/earthquakes.shtml>

NYC Office of Emergency Management, www.nyc.gov/oem

OEM on Facebook, www.facebook.com/NYCemergencymanagement

OEM on Twitter, [@nycoem](https://twitter.com/nycoem)

Notify NYC: Register for emergency notifications by visiting nyc.gov/notifynyc, calling 311, or following [@NotifyNYC](https://twitter.com/NotifyNYC) on Twitter

U.S. Geological Survey, www.usgs.gov

<http://www.shakeout.org/schools/resources/>